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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,417	12/18/2001	Jong-Youn Kim	K-009C	6840
34610	7590	08/19/2005	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			NGUYEN, BINH QUOC	
			ART UNIT	PAPER NUMBER
			2664	

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/017,417	KIM, JONG-YOUN	
	Examiner	Art Unit	
	Binh Q. Nguyen	2664	

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/061997.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/16/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. **Claims 1- 41** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 6,339,590 in view of

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U.S Patent No. 6,666,281 claims 1-55. Although the conflicting claims are not identical, they are not patentably distinct from each other because of reason set below:

Regarding claim 1: A method of performing a handoff in a mobile communication System, comprising:

modulating data of a non-fall rate frame having at least one repeated symbol by a first base station at a prescribed energy transmission level (*see US 6,339,590 column 7, lines 22-26*);

generating a searching period by reducing a number of repeated symbols while maintaining the prescribed energy transmission level (*see US 6,339,590 column 7, lines 27-29*) by increasing an average symbol energy level in a forward link; and

searching frequency information of at least one second base station by a mobile terminal during the searching period to perform a handoff (*see US 6,339,590 column 7, lines 30-32*).

The US 6,339,590 does not disclose, “by increasing an average symbol energy level in a forward link”. However, the claim 1 of US 6,666,281 is disclosing, “increasing a symbol energy of remaining symbols to maintain the prescribed energy level of the frame” (*see US 6,665,281 column 8, lines 15-16*).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of claim 1 of the US 6,339,590, and US 6,666,281 to provide an efficiency handoff in a mobile communication system.

Regarding claim 2: The US 6,666,281 is silent to disclose the method of Claim 1, wherein the base station controls the power level of the non-full rate frame of the forward link prior to

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generating the searching period. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of claim 1 of the US 6,339,590, and US 6,666,281 to provide the handoff in a mobile communication system having a base station controls the power level of the non-full rate frame of the forward link prior to generating the searching period.

Regarding claim 3: The US 6,666,281 is silent to disclose the method of Claim 1, wherein the base station increases the forward link power of the non-full rate frame prior to generating the searching period. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of claim 1 of the US 6,339,590, and US 6,666,281 to provide the handoff in a mobile communication system having the base station increases the forward link power of the non-full rate frame prior to generating the searching period.

Regarding claim 4: The method of Claim 3, wherein the average symbol energy during the non-full rate frame is increased prior to generating the searching period (*see US 6,665,281 claim 8, column 8, lines 35-36*).

Regarding claim 5: The method of Claim 1, wherein said modulating step further comprises controlling an energy per modulation symbol (*see US 6,339,590, claim 2, column 7, lines 34-35*).

Regarding claim 6: The method of claim 5, wherein the energy per modulation symbol is

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increased (*see US 6,665,281 'claim 1, column 8, lines 15-16', and "claim 2, column 8, lines 20-22"*).

Regarding claim 7: The method of claim 5, wherein the modulating step further comprises controlling a position of the symbol (*see US 6,339,590, claim 3, column 7, lines 36-37*).

Regarding claim 8: The method of claim 7, further comprising controlling a form of a transmitting period with a variable rate characteristic of the transmission frame (*see US 6,339,590, claim 4, column 7, lines 38-40*).

Regarding claim 9: The method of claim 8, wherein said modulating step further comprises controlling an energy per information bit of the symbol (*see US 6,339,590, claim 5, column 7, lines 41-43*).

Regarding claim 10: The method of claim 1, wherein said modulating step further comprises controlling a position of the symbol (*see US 6,339,590, claim 6, column 7, lines 44-45*).

Regarding claim 11: The method of claim 1, further comprising controlling a form of a transmitting period with a variable rate characteristic of the transmission frame (*see US 6,339,590, claim 7, column 7, lines 46-48*).

Regarding claim 12: The method of claim 1, wherein the repeat time is an integer number of repetitions (*see US 6,339,590, claim 8, column 7, lines 49-50*).

Regarding claim 13. The method of claim 1, wherein the modulated data is non-compressed (*see US 6,339,590, claim 10, column 7, lines 53-54*).

Regarding claim 14. The method of claim 1, wherein a transmission length of the frame is shortened from a first length by reducing the number of symbol repetitions and wherein the inserted search period reconstructs the frame to the first length (*see US 6,339,590, claim 11, column 7, lines 55-59*).

Regarding claim 15. The method of claim 1, wherein the at least one repeated symbol is identical to at least one other transmitted symbol (*see US 6,339,590, claim 14, column 7, lines 65-67*).

Regarding claim 16. A method for providing a handoff in a mobile communication system, comprising:

modulating data by a base station into a non-fall rate frame having at least one repeated symbol period by controlling an energy transmission level (*see US 6,339,590, claim 15, column 8, lines 1-6*);

forming a non-transmitting period within the modulated frame at the base station by reducing a number of repeated symbols (*see US 6,339,590, claim 15, column 8, lines 67-10*) and increasing an average symbol energy during the modulated frame; and

searching frequency Information of a peripheral base station during the non-transmitting period to perform a handoff and transmitting the searched Information to a transmitter of the base station (*see US 6,339,590, claim 15, column 8, lines 11-14*).

The US 6,339,590 does not disclose, “by increasing an average symbol energy during the modulated frame”. However, the claim 1 of **US 6,666,281** is disclosing, “increasing a symbol energy of remaining symbols to maintain the prescribed energy level of the frame” (*see US 6,666,281 column 8, lines 15-16*).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of claim 16 of the US 6,339,590, and claim 1 of the US 6,666,281 to provide an efficiency handoff in a mobile communication system.

Regarding claim 17. The US 6,666,281 is silent to disclose the method of claim 16, wherein modulating data further comprises increasing an average symbol energy within the modulated frame prior to forming the non-transmitting period. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of the US 6,339,590, and US 6,666,281 to provide an efficiency handoff in a mobile communication system.

Regarding claim 18. The US 6,666,281 is silent to disclose the method of claim 16, wherein the energy transmission level is controlled on the forward link prior to forming the non-transmitting period. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of the US 6,339,590, and US 6,666,281 to provide an efficiency handoff in a mobile communication system.

Regarding claim 19. The method of claim 16, wherein a non-transmitting period is inserted into the transmission frame by controlling the number of repeated symbols based on the transmission symbol energy (*see US 6,339,590, claim 16, column 8, lines 15-18*).

Regarding claim 20. The method of claim 16, wherein said non-transmitting period of said transmission frame is inserted in a random pattern through a variable rate limitation method (*see US 6,339,590, claim 17, column 8, lines 19-21*).

Regarding claim 21. The method of claim 20, wherein said random pattern is any one of a half rate, a quarter rate, and an eighth rate (*see US 6,339,590, claim 18, column 8, lines 22-23*).

Regarding claim 22. The method of claim 16, wherein said non-transmitting period of said transmission frame is a frequency searching period (*see US 6,339,590, claim 19, column 8, lines 24-25*).

Regarding claim 23. The method of claim 22, wherein a starting point of said frequency searching period is modularly increased in a length unit of a transmitting period (*see US 6,339,590, claim 20, column 8, lines 27-29*).

Regarding claim 24. The method of claim 22, wherein a starting point of said frequency searching period is alternately changed to a front part and a rear part of a frame to maximize the

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frequency searching period (*see US 6,339,590, claim 21, column 8, lines 30-33*).

Regarding claim 25. The method of claim 16, -wherein the non-transmitting period is formed based on a form of a transmitting period with a variable rate characteristic (*see US 6,339,590, claim 22, column 8, lines 34-35*).

Regarding claim 26. The method of claim 16, wherein the number of repetitions is an integer (*see US 6,339,590, claim 23, column 8, lines 36-37*).

Regarding claim 27. A method for providing a handoff in a mobile communication System, comprising:

controlling an energy level of symbols in a non-full rate transmission frame on a forward link at a first base station (*see US 6,339,590, claim 24, column 8, lines 45-47*);

generating a non-transmitting period in the frame of the first base Station by reducing a number of repetitions of a transmission symbol in a pre-transmission frame and at least one of a position and form of a transmitting period (*see US 6,339,590, claim 24, column 8, lines 40-44*;
and

searching a second base station signal of a different frequency during the non-transmitting period by a mobile station that has received the transmission frame (*see US 6,339,590, claim 24, column 8, lines 49-51*).

Regarding claim 28. The US 6,666,281 is silent to disclose the method of claim 27, wherein controlling the energy level comprises increasing an average symbol energy within the frame prior to forming the non-transmitting period (*see US 6,666,281 claim 1, column 8, line 7-19*). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of claim 24 of the US 6,339,590, and claim 1 of the US 6,666,281 to provide an efficiency handoff in a mobile communication system.

Regarding claim 29. The method of claim 27, wherein said non-transmitting period of said transmission frame is a frequency searching period (*see US 6,339,590, claim 26, column 8, lines 55-57*).

Regarding claim 30. The method of claim 27, wherein the mobile station transmits a signal to the second base station to perform the search for the second base station (*see US 6,339,590, claim 35, column 10, lines 17-19*).

Regarding claim 31. The method of claim 27, wherein the number of repetitions is an integer (*see US 6,339,590, claim 27, column 8, lines 58-59*).

Regarding claim 32. The method of claim 27, wherein the transmission frame has the same energy level as the pre-transmission frame (*see US 6,339,590, claim 28, column 8, lines 60-62*).

Regarding claim 33. The method of claim 27, wherein data comprising the frame is limited to non-compressed data (*see US 6,339,590, claim 29, column 8, lines 63-64*).

Regarding claim 34. A mobile communication system, comprising:

a base station configured to modulate data into a non-full rate transmission frame having at least one repeated symbol and a prescribed transmission energy level, said base station forming a non-transmitting searching period by reducing a number of repetitions and controlling the prescribed transmission energy level (*see US 6,339,590, claim 30, columns 8-9, lines 65-67 and 1-5*); and

a terminal configured to search frequency information during the non-transmitting searching period for performing an inter-frequency handoff and to transmit the searched frequency information to said base station (*see US 6,339,590, claim 30, column 9, lines 6-9*).

Regarding claim 35. The US 6,666,281 is silent to disclose the system of claim 34, wherein controlling the energy level comprises increasing an average symbol energy within the frame prior to forming the non-transmitting period (*see US 6,666,281 claim 1, column 8, line 7-19*). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of claim 30 of the US 6,339,590, and claim 1 of the US 6,666,281 to provide an efficiency handoff in a mobile communication system.

Regarding claim 36. The telephone system of claim 34, wherein said base station comprises:

a modulator that modulates the data to the prescribed energy level of transmission frame;

a gain control element that inserts the non-transmitting period into the transmission frame;

and

a transmitter coupled to said gain controller to transmit the transmission frame (*see US 6,339,590, claim 31, column 9, lines 10-18*).

Regarding claim 37. The system of claim 34, wherein said terminal comprises:

a receiver that receives the transmission frame;

a demodulator coupled to demodulate the received transmission frame; and

a frequency synthesizer that varies a frequency during the non-transmitting period and searches the frequency information of a peripheral base station having a different frequency to perform a handoff (*see US 6,339,590, claim 32, columns 9-19, lines 19-21, and 1-7*).

Regarding claim 38. The system of claim 34, wherein the number of repetitions is an integer (*see US 6,339,590, claim 33, column 10, lines 8-9*).

Regarding claim 39. The system of claim 34, wherein the prescribed transmission energy is determined based on an inverse proportion of a number of repetitions of a transmission symbol,

and at least one of a position and form of a transmitting period with a variable rate characteristic of the transmission frame (*see US 6,339,590, claim 34, column 10, lines 10-16*).

Regarding claim 40. A method of performing a handoff in a mobile communication system, comprising:

modulating data of a non-full rate frame having at least one repeated symbol by a first base station at prescribed energy transmission level (*see US 6,665,281 claim 53, column 12, lines 7-9*);

generating a searching period by reducing a portion of the non-full rate frame while maintaining the prescribed energy transmission level by increasing an average symbol energy during the modulated frame in a forward link (*see US 6,665,281 claim 53, column 12, lines 10-13*); and

searching frequency information of at least one second base station by a mobile terminal during the searching period to perform a handoff (*see US 6,665,281 claim 53, column 12, lines 14-16*).

Regarding claim 41. A method of performing a handoff in a mobile communication system, comprising:

modulating data of a non-full rate frame having at least one repeated symbol at a prescribed energy transmission level (*see US 6,665,281 claim 54, column 12, lines 19-22*);

generating a searching period by non-transmitting a portion of the non-full rate frame while maintaining the prescribed energy transmission level by increasing an average symbol energy during the modulated frame (*see US 6,665,281 claim 54, column 12, lines 26-29*); and

searching frequency information of at least one second base station during the searching period to perform a handoff (*see US 6,665,281 claim 54, column 12, lines 30-31*).

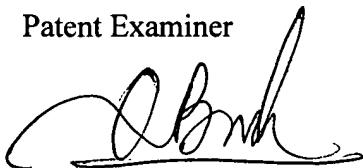
Contact Information

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh Q. Nguyen whose telephone number is 571-272-8563. The examiner can normally be reached on M-F: 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner



Binh Q Nguyen
08/09/2005



WELLINGTON CHIN
TRISORY PATENT EXAMINE